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Term: web and serve\$6 near6 quer\$6 and dynami\$4 near6
cache

Display: 10 Documents in **Display Format:** TI Starting with Number 1

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<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT	web and serve\$6 near6 quer\$6 and dynami\$4 near6 cache	13	<u>L13</u>
USPT	web and serve\$6 near6 quer\$6 near5 dynami\$4 near6 cache	0	<u>L12</u>
USPT	web near6 serve\$6 near6 quer\$6 near5 dynami\$4 near6 cache	0	<u>L11</u>
USPT	web near3 serve\$2 near2 quer\$2 near5 dynami\$4 near6 cache	0	<u>L10</u>
USPT	web near6 serve\$2 near5 quer\$4 dynami\$4 near6 cache	899	<u>L9</u>
USPT	11 and quer\$4 near5 cache and cop\$4	36	<u>L8</u>
USPT	16 and datase\$2	0	<u>L7</u>
USPT	11 and quer\$4 near5 cache	37	<u>L6</u>
USPT	11 and cop\$4 and datase\$2	3	<u>L5</u>
USPT	12 and datase\$2	3	<u>L4</u>
USPT	12 and reload	0	<u>L3</u>
USPT	11 and cache near5 databas\$2	15	<u>L2</u>
USPT	updat\$4 near4 cache near8 serve\$2 and quer\$4 near9 cache	40	<u>L1</u>

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Clear

Help

Logout

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<u>DB Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
USPT	web and serve\$6 near6 quer\$6 and dynami\$4 near6 cache	13	<u>L13</u>
USPT	web and serve\$6 near6 quer\$6 near5 dynami\$4 near6 cache	0	<u>L12</u>
USPT	web near6 serve\$6 near6 quer\$6 near5 dynami\$4 near6 cache	0	<u>L11</u>
USPT	web near3 serve\$2 near2 quer\$2 near5 dynami\$4 near6 cache	0	<u>L10</u>
USPT	web near6 serve\$2 near5 quer\$4 dynami\$4 near6 cache	899	<u>L9</u>
USPT	11 and quer\$4 near5 cache and cop\$4	36	<u>L8</u>
USPT	16 and datase\$2	0	<u>L7</u>
USPT	11 and quer\$4 near5 cache	37	<u>L6</u>
USPT	11 and cop\$4 and datase\$2	3	<u>L5</u>
USPT	12 and datase\$2	3	<u>L4</u>
USPT	12 and reload	0	<u>L3</u>
USPT	11 and cache near5 databas\$2	15	<u>L2</u>
USPT	updat\$4 near4 cache near8 serve\$2 and quer\$4 near9 cache	40	<u>L1</u>

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L6: Entry 3 of 37

File: USPT

Dec 11, 2001

DOCUMENT-IDENTIFIER: US 6330600 B1

TITLE: System for synchronizing configuration information of a network element if received trap sequence number is out-of-sequence

DEPR:

Server 14 in system 10 communicates with network element 16 using management network 20. Server 14 maintains at least portions of configuration information stored in MIB 24 for each managed network element 16 in a memory, which may include one or more selected caches 30 (referred to generally as cache 30) and one or more databases 32 (referred to generally as database 32). In a particular embodiment, cache 30 includes selected configuration information of network element 16 that is readily accessible to clients 12, whereas database 32 includes a complete and persistent copy of configuration information stored in MIB 24. Database 32 supports Standard Query Language (SQL), object-oriented operation, or any other suitable storage and retrieval scheme to allow components in system 10 to access stored configuration information of network element 16. One important aspect of system 10 is that server 14 maintains cache 30 to allow faster access to configuration information without performing queries to database 32.

DEPR:

Clients 12, also coupled to management network 20, allow service providers to monitor and manage network elements 16. In a particular embodiment, clients 12 perform management functions by accessing configuration information stored in cache 30 and/or database 32 maintained by server 14. For example, clients 12 may perform queries to cache 30 and/or database 32 to present a user with a current view or status of network element 16. Clients 12 may also provide a graphical user interface (GUI) that presents graphically the current state of network element 16, and allows users of client 12 to modify or set configuration information in network element 16. In a particular embodiment, client 12 may operate or interface with an application programming interface (API), such as CORBA, or other suitable external program to deliver network management functions.

DEPR:

Each trap includes an object identifier that associates configuration information in MIB 24 with a module, slot, port or other component designation of network element 16. A trap also includes an event code, a timestamp, and a trap sequence number (TSN). During operation, network element 16 generates a number of

traps indicating installation of new components, errors or alarms, or other condition resulting in the generation of a trap for communication to server 14. Due to congestion or limitations in network 20, downtime of components in system 10, or other reasons, server 14 may miss the communication of traps or receive traps out of sequence. In these instances server 14 must not only update its memory (e.g., cache 30 and database 32) with any received traps, but also reconcile its memory whenever traps are missed or received out of sequence.

DEPR:

The above process describes a reconciliation of database 32 in step 108 as part of a full database reconciliation process and reconciliation of database 32 at step 122 on a data subset basis. Inherent in 108 and 122 is the logical internal reconciliation performed by server 14 to maintain consistency between database 32 and cache 30. Therefore, during or after reconciliation of database 32, server 14 also updates the contents of cache 30 to maintain consistency between cache 30 and database 32. This process may be performed in a similar manner as the reconciliation between database 32 and MIB 24, or using any other suitable database reconciliation process. The maintenance of the integrity of cache 30 to reflect information maintained persistently in database 32 may also be done by a separate process that periodically marks entries in cache 30 as valid or invalid, retrieves updated information from database 32, and performs suitable housekeeping functions to remove or update invalid values from cache 30.

WEST[Help](#)[Logout](#)[Interrupt](#)[Main Menu](#)[Search Form](#)[Posting Counts](#)[Show S Numbers](#)[Edit S Numbers](#)[Preferences](#)[Cases](#)**Search Results -**

Terms	Documents
query\$ adj cache	36

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DATE: Monday, February 04, 2002 [Printable Copy](#) [Create Case](#)

Set Name
side by sideQueryHit Count Set Name
result set

DB=USPT,PGPB,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=OR

<u>L30</u>	query\$ adj cache	36	<u>L30</u>
<u>L29</u>	l6 and l17	0	<u>L29</u>
<u>L28</u>	l6 and l16	6	<u>L28</u>
<u>L27</u>	l6 and l15	8	<u>L27</u>
<u>L26</u>	l6 and l14	0	<u>L26</u>
<u>L25</u>	l6 and l13	1	<u>L25</u>
<u>L24</u>	l6 and l12	4	<u>L24</u>
<u>L23</u>	l6 and l11	2	<u>L23</u>
<u>L22</u>	l6 and l10	5	<u>L22</u>
<u>L21</u>	l6 and l10	39	<u>L21</u>
<u>L20</u>	l6 and l9	13	<u>L20</u>
<u>L19</u>	l6 and l8	31	<u>L19</u>
<u>L18</u>	l6 and l7	8	<u>L18</u>
<u>L17</u>	((711/113)!.CCLS.))	457	<u>L17</u>
<u>L16</u>	((711/\$)!.CCLS.))	12620	<u>L16</u>
<u>L15</u>	((709/\$)!.CCLS.))	13955	<u>L15</u>
<u>L14</u>	((709/240)!.CCLS.))	100	<u>L14</u>
<u>L13</u>	((707/206)!.CCLS.))	247	<u>L13</u>
<u>L12</u>	((707/200)!.CCLS.))	764	<u>L12</u>
<u>L11</u>	((707/104.1)!.CCLS.))	1425	<u>L11</u>
<u>L10</u>	((707/100)!.CCLS.))	918	<u>L10</u>
<u>L9</u>	((707/10)!.CCLS.))	1749	<u>L9</u>
<u>L8</u>	((707/\$)!.CCLS.))	12714	<u>L8</u>
<u>L7</u>	((707/1)!.CCLS.)	1259	<u>L7</u>
<u>L6</u>	l5 and relational with database	39	<u>L6</u>
<u>L5</u>	L4 and data same items	80	<u>L5</u>
<u>L4</u>	L3 and copies	201	<u>L4</u>
<u>L3</u>	L2 and query\$ same cache	349	<u>L3</u>
<u>L2</u>	L1 and server	55427	<u>L2</u>
<u>L1</u>	(network or internet or www)	531311	<u>L1</u>

END OF SEARCH HISTORY

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Generate Collection

Print

L5: Entry 11 of 80

File: USPT

Jan 22, 2002

US-PAT-NO: 6341311

DOCUMENT-IDENTIFIER: US 6341311 B1

TITLE: Directing data object access requests in a distributed cache

DATE-ISSUED: January 22, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Brian J.	Seattle	WA		
Valloppillil; Vinod V.	Redmond	WA		
Hurvig; Hans	Copenhagen			DKX

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Microsoft Corporation	Redmond	WA			02

APPL-NO: 9/ 087330 [PALM]

DATE FILED: May 29, 1998

INT-CL: [7] G06 F 13/00

US-CL-ISSUED: 709/226

US-CL-CURRENT: 709/226

FIELD-OF-SEARCH: 709/201, 709/203, 709/217, 709/218, 709/219, 709/223, 709/224,
709/225, 709/226, 709/227

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

	PAT-NO	ISSUE DATE	PATENTEE-NAME	US-CL
<input checked="" type="checkbox"/>	<u>5341499</u>	August 1994	Doragh	709/321
<input type="checkbox"/>	<u>5539883</u>	July 1996	Allon et al.	709/105
<input type="checkbox"/>	<u>5603029</u>	February 1997	Aman et al.	709/105
<input type="checkbox"/>	<u>5612865</u>	March 1997	Dasgupta	364/184
<input type="checkbox"/>	<u>5623585</u>	April 1997	Bailey	395/182.04
<input type="checkbox"/>	<u>5649093</u>	July 1997	Hanko et al.	395/182.04
<input type="checkbox"/>	<u>5740371</u>	April 1998	Wallis	709/229
<input type="checkbox"/>	<u>5774660</u>	June 1998	Brendel et al.	709/201
<input type="checkbox"/>	<u>5787470</u>	July 1998	DiSimone et al.	711/124
<input type="checkbox"/>	<u>5805824</u>	September 1998	Kappe	709/242
<input type="checkbox"/>	<u>5826270</u>	October 1998	Rutkowski et al.	707/10
<input type="checkbox"/>	<u>5864852</u>	January 1999	Luotonen	707/10
<input type="checkbox"/>	<u>8918013</u>	June 1999	Mighdoll et al.	395/200.47
<input type="checkbox"/>	<u>5924116</u>	July 1999	Aggarwal et al.	711/122
<input type="checkbox"/>	<u>5933606</u>	August 1999	Mayhew	395/200.69
<input type="checkbox"/>	<u>5933849</u>	August 1999	Srbljic et al.	711/118
<input type="checkbox"/>	<u>5935207</u>	August 1999	Logue et al.	709/219
<input type="checkbox"/>	<u>5940594</u>	August 1999	Ali et al.	395/200.33
<input type="checkbox"/>	<u>5987233</u>	November 1999	Humphrey	395/200.47
<input type="checkbox"/>	<u>5991804</u>	November 1999	Bolosky et al.	709/221
<input type="checkbox"/>	<u>5991809</u>	November 1999	Kriegsman	709/226
<input type="checkbox"/>	<u>6006251</u>	December 1999	Toyouchi et al.	709/203
<input type="checkbox"/>	<u>6006264</u>	December 1999	Colby et al.	709/226
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<input type="checkbox"/>	<u>6029168</u>	February 2000	Frey	707/10
<input type="checkbox"/>	<u>6029195</u>	February 2000	Herz	725/116
<input type="checkbox"/>	<u>6052718</u>	April 2000	Gifford	709/219
<input type="checkbox"/>	<u>6112228</u>	August 2000	Earl et al.	709/205
<input type="checkbox"/>	<u>6122666</u>	September 2000	Beurket et al.	709/226

OTHER PUBLICATIONS

Valloppillil, Vinod and Ross, Keith W. Cache Array Routing Protocol v1.0. World Wide Web. pp. 1-9.
 Microsoft Corporation. Cache Array Routing Protocol and Microsoft Proxy Server 2.0. World Wide Web: www.microsoft.com. pp. 1-15.
 Valloppillil, Vinod and Cohen, Josh. Hierarchal HTTP Routing Protocol. World Wide Web. pp. 1-7.
 How to Make Distributed Proxy Server by URL Hasing, (last modified Apr. 1999, http://naragw.sharp.co.jp/sps/.
 Briefing on Super Proxy Script, (last modified Aug. 1998), http://naragw.sharp.co.jp/sps/sps-e.html.

ART-UNIT: 2153

PRIMARY-EXAMINER: Meky; Moustafa M.

ATTY-AGENT-FIRM: Workman, Nydegger & Seeley

ABSTRACT:

A method, computer program product, and system for routing URL data object requests in a proxy server array. A URL data object request is received at one proxy server of the array while the desired URL data object resides in the local cache of another proxy server in the array. The receiving proxy server will deterministically identify the residing proxy server based on information residing thereon without resorting to expensive query-response transactions, such as those that occur in proxy server arrays using ICP. An array membership list containing array membership information is available at each and every proxy server and is used in conjunction with the URL as the information for identifying the correct proxy server where the URL data object resides. First, a deterministic hash value is computed for each proxy server name and the URL. Next, a combined hash value is computed that combines the URL hash value with each proxy server hash value. Finally, the proxy server with the highest "score" or combined hash value is identified as the proxy server where the desired URL data object should reside in local cache storage. Since the array membership list, the URL, and the hashing algorithm are the same at each proxy server, the same proxy server will be identified as having the URL data object regardless of which proxy server originally receives the URL data object request.

24 Claims, 17 Drawing figures